DAIRYING

VARIATIONS IN CREAM TESTS.

The lack of harmony, so often found in the hand separator plant has many causes; but perhaps the variation of the cream test has strained more friendly relations than any other one trouble. If the test is increased a few points, all well and good, but any decrease in test will generally make the buttermaker very long on trouble and often short on cream.

"We handle our machine the same every day,'" growls the patron and drives off muttering. But do you run your machine the same every day? Is the condition of the milk the same every day?

An experiment carried on at the Kansas station demonstrated that the temperature of the milk may cause a variation of from 1 to 5 per cent. Milk separated one day when drawn from the cow and the next day allowed to stand in zero temperature for some time before separating will have considerable difference in temperature.

The difference due to variation in speed was found to be from 1 to 14 per cent. With the same person turning the separator each day, the speed will not remain constant unless great care is exercised. It is very probable then that where different members of the family turn the machine, the number of revolutions per minute will be widely different. Vibration of the bowl which may be caused by quick starting, unsteady foundation, bent bowl spindle and various defects in separator were found to make a variation in test of 2 to 12 per cent.

The amount of flush water was found to make a difference of from 1 to 12 per cent. Flush water is generally thrown into supply can regardless of the amount. It is very evident that even with the same operator there would be a wide variation in the amount of flush water used. Where the machine is operated by different people from day to day one can readily see that there is a probability of a very wide variation in test.

The rate of inflow also causes tests to vary from 1 to 6 per cent. The rate of inflow is also affected by the temperature. The physical condition of the milk may cause a variation of from 1 to 12 per cent.

Milk which has not been strained previous to separating may contain impurities in suspension such as pieces of manure, or any litter which is found in the cow barn of the average creamery patron. These may clog the skim-milk tube, causing some of the skim-milk to pass through the cream outlet. The cream outlet or slot may become clogged with dirt, causing the cream to be very thick. The amount of acid, the milk would be considered under this point. The more acid, the more curd will be precipitated and the quicker a layer will form around outside of bowl, making the cream outlet smaller, and, therefore, producing thicker cream which becomes thicker and thicker until the separator finally is entirely clogged. The more acid and the smaller the machine the sooner the machine will clog.

With all these conditions affecting the cream test, is it reasonable to suppose that the test will remain constant from day to day? If there is only one patron who is sure that all of these conditons remain unchanged from day to day, he surely has a right to think that probably a fair and representative sample was not taken or some mistake was made in the testing.—Pacific Dairy Review.

THE INFLUENCE OF ACIDITY OF CREAM ON THE FLAVOR OF BUTTER.

It has been a generally accepted theory among teachers of and writers on dairy subjects that the production of good butter necessitates the development of a certain amount of acid in the cream, for two reasons—to develop a desirable flavor and to improve the keeping quality. Recent investigations by the United States Department of Agriculture indicate, however, that butter made from pasteurized sweet cream has better keeping qualities and remains free from objectionable flavors for a longer time than butter from sour cream.

The Dairy Division of the Bureau of Animal Industry for the past three years has been making astudy of the changes which butter undergoes in storage, and especially the influence of acidity of cream on the keeping qualities. This was done to determine the best method of making butter for storage. The investigations have been carried on by Messrs. L. A. Rogers and C. E. Gray, and included the making of experimental lots of butter by different methods and in different parts of the country. This butter was kept by different methods and in different parts of the country. This butter was kept in cold storage and was examined and scored at certain intervals, the scoring being done by men who had no previous knowledge of how, when, or where the butter was made, so that their conclusions were based strictly on the quality of the butter. A report of this work has just been issued as Bulletin 114 of the Bureau of Animal Industry.

As a result of the investigations it was found that butter frequently undergoes marked changes even when stored at very low temperatures, and that these changes are more marked as the acidity of the cream from which the butter is made is increased. No bacteria were found in the cream or the butter which could reasonably be expected to be the cause of the more rapid deterioration of the high-acid butter were not checked by heating the ripened cream, which shows that they were not brought by enzymes secreted with or in the cream and carried into the butter. The results also indicated that acid which develops normally in the cream by the action of certain bacteria, or which is added directly to the cream in the form of pure acid, brings about or assists in bringing about a slow decomposition of one or more of the compounds of which butter is largely composed.

What is regarded as of special importance is the fact that butter can be made commercially from sweet pasteurized cream without the addition of a starter. Fresh butter made this way has a flavor too mild to suit the average dealer, but it changes less in storage than butter made by the ordinary methods, and can be sold after storage as high-grade butter. At the present time there are at least ten creameries in the country making butter from sweet pasteurized cream without a starter, and many more with a starter but without ripening. The statements in regard to butter from unripened pasteurized cream do not hold for butter made from unpasteurized cream churched without ripening. Butter made in this way has pook keeping quality.

Butter for the United States navy is being made from sweet cream, and this plan, adopted last year, is giving satisfaction. A tub of sweet cream butter 14 months old on exhibition at the National Dairy Show last December, had no storage or fishy flavor, and was pronounced a fine article.

BEWARE OF THE FLY.

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er and cholera from excreta to food supplies. It will also lay its eggs upon other decaying vegetable and animal material, but of the flies that infest dwelling houses, both in cities